

EXPERIENCE SUMMARY

Environmental Remediation

Developed the concept and design requirements for the evapotranspiration (ET) landfill cover. Evaluated engineering design models and wrote a complete library of technical documents about the ET landfill cover. Wrote protocol for phytostabilization for the Air Force. Responsible for remedial systems evaluations; site closure strategies; and third party review of technical plans for landfill, groundwater and soil remediation. Helped the Interstate Technology Regulatory Cooperation (ITRC) group develop alternative landfill cover guidance. Areas of expertise include engineering, hydrology, soils, plants, water conservation, ground water, phytoremediation and alternative landfill covers.

Research

Research engineer in charge of developing new methods to control non-point pollution, establish grass, reclaim mine lands, recharge groundwater, develop hydrogeology model for the Southern High Plains and effectively manage water for dryland crop production. Responsible for planning, construction and operation of hydrologic systems, field experiments, and ground water recharge systems and wells.

EDUCATION

B.S. Agricultural Engineering, Oklahoma State University.

M.S. Agricultural Engineering, University of California.

Ph. D. Agricultural Engineering, Texas A&M University.

EXPERIENCE

March 2005 to present: Consulting Engineer. Completed publication of recent model evaluation research, and wrote and published the book "Evapotranspiration Covers for Landfills and Waste Sites".

December 1991 to March 2005. Mitretek Systems, San Antonio, Texas. **Principal Engineer.** Applied his engineering research experience in hydrology, hydrogeology, soil physics, fluid mechanics, soils, agronomy and geochemistry to technical problems encountered by the U.S. Air Force, Navy and Army Corps of Engineers in remediating contaminated sites at military bases. Reviewed and provided written comments on reports developed for programs under Superfund, Installation Restoration Program and Resource Conservation and Recovery Act. Representative projects include development of the ET landfill cover concept with a complete library of technical information, evaluation of design models for ET covers, conceptual design of ET landfill covers, development of a protocol for phytostabilization for the Air Force, landfill remediation evaluation and remediation of contaminated groundwater.

Before December 1991. Agricultural Research Service, USDA. **Research engineer and research leader.**

Hydrology and hydrogeology. Research leader and research engineer for a groundwater recharge group who measured hydrogeologic, soils, geochemistry, and water quality parameters of the Ogallala aquifer in the Southern Great Plains. First to measure and investigate rainfall runoff from cultivated drylands of the western Great Plains. **Ground water recharge.** Designed a complete water treatment system, including chemical flocculants, which successfully clarified muddy water from a playa and injected more than 60 acre-feet of treated surface water into the Ogallala aquifer through wells. **Water quality and remediation.** He was the USDA Project Officer in a cooperative field study of water quality which demonstrated that DDT and other insoluble chemical compounds pose minimal danger to groundwater quality and that highly soluble chemicals such as nitrate can be removed from aquifers by pumping from irrigation wells. Other research (a) redefined the design parameters for the control and storage of rainfall runoff water from livestock feedlots; (b) demonstrated that, contrary to popular belief, the probability for water pollution

from small rainstorms on agricultural watersheds is substantial; and (c) demonstrated that seepage through earthen linings of reservoirs, canals, etc., can be reduced by adding gravel to the soil. **Mineland reclamation.** In cooperation with a colleague demonstrated that selected overburden removed from above the coal seam is of equal value to native topsoil when used as soil surface cover for minespoil. **Water management.** Developed the conservation bench terrace that utilizes surface runoff water to increase grain production and controls soil erosion on semiarid farmlands. The conservation bench terrace system increased whole farm production by 50 percent on dry farmlands.

PROFESSIONAL AFFILIATIONS

Am. Soc. of Agricultural Engineers – Fellow

American Society of Civil Engineers

American Society of Agronomy

Soil Science Society of America

Association of Ground Water Scientists and Engineers

SPECIAL TRAINING

HAZWOPER - Hazardous Waste Operations and Emergency Response, 40 hour + annual refresher

Training in Hydrogeology, Geochemistry, and Groundwater Contamination, School of Geology, Oklahoma State University

PROFESSIONAL HONORS

Fellow, American Society of Agricultural Engineers

Member: Sigma Tau, Phi Kappa Phi, and Sigma Xi

PUBLICATIONS - 147

See attached list of major publications.

Publications by:
Victor L. Hauser
Agricultural Engineer

Books - 1

Refereed Publications - 86

Laboratory Reports, Reports to Clients, Handbooks, and Abstracts - 60

Book

1. Hauser, Victor L. 2009. *Evapotranspiration Covers for Landfills and Waste Sites*. CRC Press, Taylor & Francis Group, Boca Raton, Florida (203 pp).

Major Published Papers

Hydrology, water supply, hydrogeology

2. Hauser, V. L. and Allen, R. R. 1959. *Runoff measured on silty clay loam soils on the High Plains of Texas*. Texas Agric. Exp. Station, Prog. Rep. #2098. 3 pp.
3. Hauser, V. L. 1960. *Relation between the flow-rate equation and length of converging section of Parshall flume*. Transactions ASAE 3(2):86-88.
4. Hauser, Victor L. 1966. *Hydrology, conservation, and management of runoff water in playas on the Southern High Plains*. USDA, Agricultural Research Service, Conservation Research Report #8. 26 pp.
5. Hauser, V. L., Clark, J. W. and Barefoot, A. D. 1975. *Rainfall-induced runoff computed for fallow fields at Hays, Kansas*. Paper no. 75-2031. Presented to the American Society of Agricultural Engineers, (ASAE), Davis, CA, June 22-25. Available from ASAE, 2950 Niles Rd., St. Joseph, MI 49085.
6. Hauser, V. L. and Hiler, E. A. 1975. *Rainfall-induced runoff computed for fallow fields*. Transactions ASAE 18(1):122-125.
7. Lotspeich, F. B., Lehman, O. R., Hauser, V. L. and Stewart, B. A. 1971. *Hydrogeology of a playa near Amarillo, Texas*. Technical Report 10, Southwestern Great Plains Research Center, and Texas Agricultural Experiment Station, 34 pp.
8. Jones, O.R., Eck, H. V., Smith, S. J., Coleman, G. A. and Hauser, V. L. 1985. *Runoff, soil and nutrient losses from rangeland and dry-farmed cropland in the Southern Great Plains*. Journal Soil and Water Conservation 40(1):161-164.
9. Hauser, V. L., and Chichester, F. W. 1987. *Rainfall intake rates on five soil profiles*. Transactions ASAE 30(3):670-675, 682.
10. Hauser, V. L., and Jones, O. R. 1990. *Management of surface runoff for crop production*. pp. 261-263. [In: Unger, P. W., Jordan, W. R., Sneed, T. V., and Jensen, R. W. (eds.) Proceedings "International Conference on Dryland Farming, Challenges in Dryland Agriculture - A Global Perspective", August 15-19, 1988, Amarillo/Bushland, TX]. Texas Agricultural Experiment Station.
11. Hauser, V. L. and Jones, O. R. 1991. *Runoff curve numbers for the Southern High Plains*. Transactions ASAE 34(1):142-148.

Hydrologic and water balance measurement

12. Hauser, V. L. 1962. *Paraffin standards for neutron meter calibration*. Agricultural Engineering 43(2):88-89.
13. van Bavel, C. H. M., Nixon, P. R. and Hauser, V. L. 1963. *Soil moisture measurement with the neutron method*. USDA, ARS-41-70, 39 pp.
14. Hauser, V. L. 1984. *Neutron meter calibration and error control*. Transactions ASAE 27(3):722-728.

Dryland water conservation and plant production

15. Zingg, A. W. and Hauser, V. L. 1959. *Terrace benching to save potential runoff for semi-arid land*. Agronomy Journal 51(5):289-292.
16. Hauser, V. L. 1961. *Conserving runoff water with the Zingg conservation bench terrace*. Soil Conservation 27(4):13-14.
17. Hauser, V. L., Van Doren, C. E. and Robins, J. S. 1962. *A comparison of level and graded terraces in the Southern High Plains*. Transactions ASAE 5(1):75-77.
18. Hauser, V. L. and Cox, M. B. 1962. *Evaluation of Zingg conservation bench terrace*. Agricultural Engineering 43(8):462-464, 467.
19. Hauser, V. L. 1968. *Conservation bench terraces in Texas*. Transactions ASAE 11(3):385-386, 392.
20. Hauser, V. L. and Taylor, H. M. 1964. *Evaluation of deep-tillage treatments on a slowly permeable soil*. Transactions ASAE 7(2):134-136, 141.
21. Eck, H. V., Hauser, V. L. and Ford, R. H. 1965. *Fertilizer needs for restoring productivity on Pullman silty clay loam after various degrees of soil removal*. Soil Science Society of America Proceedings 29(2):209-213.
22. Burnett, E. and Hauser, V. L. 1967. *Deep tillage and soil-plant-water relationships*. In Conference Proceedings, Tillage for Greater Crop Production. American Society of Agricultural Engineers, ASAE Publication Proc-168. pp. 47-52.
23. Jones, O. R., Hauser, V. L., and Popham, T. W. 1994. *No-tillage effects on infiltration, runoff and water conservation on dryland*. Transactions of ASAE 37(2): 473-479.
24. Jones, O. R., Southwick, L. M., Smith, S. J., and Hauser, V. L. 1999. *Soil quality and environmental impacts of dryland residue management systems*. Journal of Soil and Water Conservation pp153-167.

Ground water recharge and ground water hydrology

25. Hauser, V. L. and Lotspeich, F. B. 1967. *Artificial groundwater recharge through wells*. Journal Soil and Water Conservation 22(1):11-15.
26. Rebhun, M. and Hauser, V. L. 1967. *Clarification of turbid water with polyelectrolytes for recharge through wells*. International Association Scientific Hydrology, Symposium at Haifa, Artificial Recharge and Management of Aquifers, sponsored by IASH and UNESCO, Publication #72. pp. 218-228.
27. Hauser, V. L. and Signor, D. C. 1967. *Water conservation and ground-water recharge research--Texas High Plains*. Texas Agricultural Experiment Station, Misc. Pub. #850. 10 pp.

28. Hauser, V. L. and Lotspeich, F. B. 1968. *Treatment of playa lake water for recharge through wells*. Transactions ASAE 11(1):108-111.
29. Signor, D. C. and Hauser, V. L. 1968. *Artificial ground water recharge through basins in the Texas High Plains*. Texas Agricultural Experiment Station, Miscellaneous Publication 895. 8 pp.
30. Signor, D. C., Hauser, V. L. and Jones, O. R. 1969. *Ground-water recharge through modified shafts*. Transactions ASAE 12(4):486-489.
31. Hauser, V. L., Gill, M. D., Gimon, D. M., and Horin, J. D. 2001. *Protocol for controlling contaminated groundwater by phytostabilization*. (165 pp). Air Force Center for Environmental Excellence, 3300 Sidney Brooks, Brooks City-Base, TX 78235. Available August 2007 from:
www.afcee.brooks.af.mil/products/techtrans/landfillcovers/LandfillProtocols.asp.

Water quality

32. Lehman, O. R. and Hauser, V. L. 1970. *Playa water quality changes with time and effects on clarification*. Water Resources Research 6(5):1420-1423.
33. Lotspeich, F. B., Hauser, V. L. and Lehman, O. R. 1969. *Quality of waters from playas on the Southern High Plains*. Water Resources Research 5(1):48-58.
34. Scalf, M. R., Hauser, V. L., McMillion, L. G., Dunlap, W. J. and Keeley, J. W. 1968. *Fate of DDT and nitrate in ground water*. Joint Report U.S. Department of Interior and U.S. Department of Agriculture, Sw. Great Plains Research Center, Bushland, TX. 46 pp.
35. McMillion, L. G. and Hauser, V. L. 1969. *Field evaluation of potential pollution from ground-water recharge*. Water Well Journal 23(8):22-24.
36. Jones, O. R. and Hauser, V. L. 1968. *Movement of bacteria from wells*. Proceedings 6th West Texas Water Conference, February 2, West Texas Water Institute, Lubbock, TX. pp. 57-68.
37. Panel report. 1973. *Agricultural uses of water*, Section V. [In: "Water Quality Criteria", National Academy of Science - National Academy of Engineering. EPA-R3-73-033]. pp. 298-366. (V. L. Hauser was a member of a 13-member panel who wrote section V).
38. Bowers, S. A., Smith, S. J. and Hauser, V. L. 1975. *Influence of coarse-textured fertilizer bands, surface ridges, and vertical straw mulches on nitrate leaching in soil*. USDA, ARS-S-56. 8 pp.
39. Lewis, R. B., Hauser, V. L., Menzel, R. G. and Ross, J. D. 1977. *Runoff frequency from small storms and implications for water quality*. Transactions ASAE 20(4):661-665.

Soil modification and seepage control

40. Hauser, V. L. 1978. *Seepage control by particle size selection*. Transactions ASAE 21(4):691-695.

Native grass establishment

41. Hauser, V. L. 1981. *Planting germinated grass seed*. Transactions ASAE 24(5):1127-1130.
42. Hauser, V. L. 1982. *Punch planting to establish grass*. Journal of Range Management 35(3):294-297.
43. Moden, W. L., Jr. and Hauser, V. L. 1982. *An automatically-fed bandoleer transplanter*. Transactions ASAE 25(4):864-867.
44. Hauser, V. L. 1983. *Grass establishment by bandoleers, transplants, and germinated seeds*. Transactions ASAE 26(1):74-78, 80.
45. Ray, K. A. and Hauser, V. L. 1983. *Making plastic bandoleers and growing plants in them*. USDA, Agricultural Research Service, Advances in Agricultural Technology, AAT-S-30/August. 15 pp.
46. Hauser, V. L. 1985. *An automatic grass transplanting machine*. Transactions ASAE 28(6):1777-1782.
47. Hauser, V. L. 1986. *Emergence of several grasses from pregerminated seed and some soil water effects*. Agronomy Journal 78(1):206-210.
48. Hauser, V. L. 1986. *Water injection in grass seed furrows*. Transactions ASAE 29(5):1247-1253.
49. Hauser, V. L. 1989. *Improving grass seedling establishment*. Journal Soil and Water Conservation 44(2):153-156.
50. Bovey, R. W., Hauser, V. L., and Meyer, R. E. 1990. *Establishment of Kleingrass with annual ryegrass and other cultural treatments*. Agronomy Journal 82(2):216-221.

Mineland reclamation

51. Chichester, F. W. and Hauser, V. L. 1984. *Revegetation of minesoils constructed from lignite overburden in east-central Texas*. Reclamation and Revegetation Research 3:137-152.
52. Hauser, V. L., and Chichester, F. W. 1989. *Water relationships of claypan and constructed soil profiles*. Soil Science Society of America Journal 53(4):1189-1196.
53. Chichester, F. W. and Hauser, V. L. 1991. *Change in chemical properties of constructed minesoils developing under forage grass management*. Soil Science Society of America Journal 55(2):451-459.

Landfill covers and remediation

54. Hauser, V. L. and Shaw, M. A. 1994. *Water movement through soil-vegetative landfill covers*. Paper no. 942176. Presented to the American Society of Agricultural Engineers, (ASAE) Kansas City, MO, June 19-22. Available from: ASAE, 2950 Niles Rd., St. Joseph, MI 49085. (19 pp).
55. Weand, B. L. and Hauser, V. L. 1997. *The evapotranspiration cover*. Environmental Protection, November. (pp 40-42).
56. Weand, B. L., Horin, J. D., Hauser, V. L., Gimon, D. M., Gill, M. D., Mehta, M. and Casagrande, D. J. 1999. *Landfill covers for use at Air Force installations*. Air Force Center for Environmental Excellence¹. (92 pp)
57. Hauser, V. L., Gimon, D. M., Hadden, D. E., and Weand, B. L. 1999. *Survey of Air Force landfills, their characteristics, and remediation strategies*. Air Force Center for Environmental Excellence¹. (45 pp)
58. Hauser, V. L., Gimon, D. M., Hadden, D. E., and Weand, B. L. 1999. *Survey of Air Force landfills, their characteristics, and remediation strategies (database)*. Air Force Center for Environmental Excellence¹.
59. Boyer, I., Hauser, V., Gimon, D. and Gill, M. 1999. *Decision tool for landfill remediation*. Air Force Center for Environmental Excellence¹. (42 pp)
60. Gill, M. D., Hauser, V. L., Horin, J. D., Weand, B. L., and Casagrande, D. J. 1999. *Landfill remediation project manager's handbook*. Air Force Center for Environmental Excellence¹. (147 pp)
61. Hauser, V. L., Gimon, D. M. and Jackson, D. R. 2000. *Golf courses on Air Force landfills*. (19 pp) Air Force Center for Environmental Excellence¹. (14 pp)
62. Hauser, V. L., and Gimon, D. M. 2001. *Vegetated landfill covers and phytostabilization – the potential for evapotranspiration-based remediation at Air Force bases*. Air Force Center for Environmental Excellence¹. (40 pp and 109 base-sheets)
63. Hauser, V. L., Weand, B. L., and Gill, M. D. 2001. *Alternative landfill covers*. (For use by the Interstate Technology & Regulatory Cooperation (ITRC) at the Alternative Landfill Covers Summit, Sept. 2001). Air Force Center for Environmental Excellence¹. (38 pp)
64. Hauser, V. L., Weand, B. L., and Gill, M. D. 2001. *Natural covers for landfills and buried waste*. Journal of Environmental Engineering 127(9): 768-775.
65. Hauser, V. L. and Gimon, D. M. 2004. *Evaluating evapotranspiration (ET) landfill cover performance using hydrologic models*. Air Force Center for Environmental Excellence¹. (112 pp)
66. Hauser, V. L., Gimon, D. M., Bonta, J. V., Howell, T. A., Malone, R. W., and Williams, J. R. 2005. *Models for hydrologic design of evapotranspiration landfill covers*. Environmental Science and Technology 39(18): 7226-7233.

¹ Air Force Center for Environmental Excellence. Available October 2012 from:
<http://www.bing.com/search?q=ET+landfill+covers&qsn&form=QBRE&pq=et+landfill+covers&sc=1-18&sp=-1&sk=>